ABSTRACT

In the basic form of merge processing, that is sort
processing, two sorted partial data string pairs are input, and
one series of sorted data string is output as a whole.
Conventionally, high parallelism of this processing has been
considered difficult. A method for dividing a sorted partial
data string pair into a plurality of segment pairs, if invented,
would allow an advanced parallel merge processing to be
performed even in a homogeneous configuration parallel computer
system, such as a tightly coupled multi-processor sharing a main
storage. The basis of merge processing is processing to input a
pair of two sorted partial data strings and to output one sorted
data string. A method for sub-dividing this input data string
pair into arbitrary data string pairs from the first part of
both data strings of the input data string pair, while
considering the magnitude of the key value, has been invented.
This method, if implemented, enables a merge operation at a
parallelism k if the data string is divided into any number of
data string pairs, for example, k sets of data string pairs, and
if merging in descending order (merging the data string pair
from the first part to the last part thereof, and outputting it
from the first part to the last part in the output area) and
merging in ascending order (merging the data string pair from
the last part to the first part thereof and outputting it from
the last part to the first part in the output area) are used, a
merge operation with a parallelism 2k can also be possible.

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